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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,635	04/28/2001	Bharti Temkin	12001-105	1591

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EXAMINER

CHUONG, TRUC T

ART UNIT	PAPER NUMBER
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2179

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/844,635

Applicant(s)

TEMKIN ET AL.

Examiner

Truc T Chuong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

### DETAILED ACTION

1. This communication is responsive to Amendment B, filed 08/05/04.
2. Claims 1-5 are pending in this application. In the Amendment B, claims 1 and 3 are independent claims; claims 1 and 2 are amended, and claims 3-5 are new claims. This action is made final.

#### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claims 1 and 3, the applicant recites "a user can create a haptic virtual environment without generating computer code"; there is not enough evidence in the specification which clearly supports the fact "without generating computer code" because the one skilled in the art would understand that there must be computer code running in the processor, database, and computer to process the GUI haptic application as claimed by the applicant.

All other claims are also rejected because of their dependency.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rice (U.S. Patent No. 6,310,619).

As to claim 1, Rice teaches a computer interface system for providing a haptic virtual environment for use in surgical training and/or surgery simulation comprising:

(a) means for providing a cursor with attributes of movement within multiple layers of a graphic display to create or modify one or more virtual objects (using attributes or parameters displayed on GUI to modify a real 3D virtual model in a high level of specific detail in medical field, e.g., col. 3 lines 1-8, col. 4 lines 15-20, and col. 6 lines 10-18);

(b) means for generating a haptic representation of said one or more virtual objects directly from a graphical representation of said one or more virtual objects, wherein said one or more virtual objects comprise a plurality of layers that are represented by a three-dimensional poly-mesh form (e.g., col. 6 lines 9-48);

(c) means for creating, modifying, and saving haptic properties (Rice inherently show the features by using the user-variable tissue-specific attribute data relating to the nature of the tissues, wherein the physics and environmental aspects of the

environment, e.g., the force and direction of gravity, atmospheric pressure etc. to modify tissue attributes (e.g., col. 3 lines 11-16, col. 4 lines 5-20, and col. 10 lines 5-35), and save the setup into data files (e.g., col. 8 lines 39-65) of said one or more virtual objects for creating a heuristic database (the invention is used in a wide variety of fields including medical students study the somatic system, e.g., col. 1 lines 25-32; therefore, the related haptic information must be stored in the medical student database for study) and creating or modifying such a heuristic database (Rice inherently shows the features of creating, modifying, saving haptic properties into a heuristic database as mentioned above; however, if Rice does not show these features, it is well known, and it would have been obvious to create, modify, and save haptic properties into a heuristic database/other databases to help the user to keep records for future retrievals of studying or experimenting the haptic models (e.g., col. 10 lines 35-50); and

(d) means for selecting all or a portion or portions of said haptic properties from said heuristic database for the modeling of haptic virtual environments, the system as a whole being constructed and managed do that a user can create said haptic virtual environment without generating computer code (the entire process of modifying the haptic model as mentioned in col. 5 lines 13-col. 6 line 19 and col. 11 lines 25-62 clearly shows that only the user works with the computer applications and tools (col. 5 line 30-col. 6 line 35), and there is no computer coding involved).

As to claim 2, Rice teaches the system of claim 1 wherein said heuristic database comprises one or more properties of static friction, dynamic friction, stiffness, and damping components (the user-variable tissue-specific attribute data relating to the nature of the tissues,

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wherein the physics and environmental aspects of the environment, e.g., the force and direction of gravity, atmospheric pressure etc. to modify tissue attributes (e.g., col. 3 lines 11-16, col. 4 lines 5-20, and col. 10 lines 5-35); the haptic interface can also receive output from the simulation program which allows a user to "move" the virtual body through a prescribed scene. As the virtual body contacts an item in the scene, the haptic interface outputs sensations such as forces, temperature, texture, etc., to the portion of the user's anatomy which corresponds to the point of contact for the model, col. 11 lines 48-54).

As to claim 3, Rice teaches a method of developing and utilizing complex and precise haptic virtual objects for user in surgical training comprising the steps of:

creating a cursor with attributes of movement within multiple layers of graphic display to create or modify one or more virtual objects (e.g., col. 6 lines 1-48);

selecting a virtual object with said cursor (e.g., the variables can be modified within the particular simulation program, through a graphical user interface (GUI), a keyboard 90, or through other VR I/O devices 86. A number of specialized types of VR I/O devices 86 have been developed to measure user input and provide output to the simulation program based on the user input. These devices vary in complexity, and include, for example, a simple mouse, a trackball, dextrous sensing gloves, Cyberscopes, head-mounted displays, LCD glasses, 3D sound generators, etc., col. 11 lines 25-54);

modifying said virtual object to create a volumetric three-dimensional poly-mesh form that includes a plurality of layers, wherein a computing system converts said virtual object into said poly-mesh form without a user performing any software coding (the entire process of modifying the haptic model as mentioned in col. 5 lines 13-col. 6 line 19 and col. 11 lines 25-62

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clearly shows that only the user works with the computer applications and tools (col. 5 line 30-col. 6 line 35), and there is no computer coding involved);

modifying a surface stiffness of one or more layers of said poly-mesh form (using the user-variable tissue-specific attribute data relating to the nature of the tissues, wherein the physics and environmental aspects of the environment, e.g., the force and direction of gravity, atmospheric pressure etc. to modify tissue attributes (e.g., col. 3 lines 11-16, col. 4 lines 5-20, and col. 10 lines 5-50); and

modifying a static and dynamic friction of one or more layers of said poly-mesh form (e.g., col. 3 lines 11-16, col. 4 lines 5-20, and col. 10 lines 5-50).

As to claim 4, it is a method claim of system claim 2. Note the rejection of claim 2 above.

As to claim 5, Rice teaches the method of claim 3, as implemented such that a plurality of properties of said virtual object can be easily modified in order to closely represent human tissue properties (the term "tissue-specific attribute" as used herein refers to any characteristic of a particular anatomical tissue which defines its operation, structure, or its relationship to other elements in an environment. The data for tissue-specific attributes are documented in the domain of the texts, atlases, monographs, and research literature of the applicable scientific disciplines: Gross anatomy, histology, neuroanatomy, physiology, kinesiology, biomechanics, biophysics and physical medicine. Tissue attributes can also be obtained from the particular knowledge of the programmer to define a model which functions within the limits of the attributes, col. 10 lines 35-54).

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***Response to Arguments***

Applicant's arguments with respect to claims 1-2 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ross et al. (U.S. Patent No. 6,608,628 B1) teaches haptic medical data model, GUI, attributes, layers, mesh, database, and rotate images (cols. 3-16 and figs. 1, 5, 6C-11E).

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.



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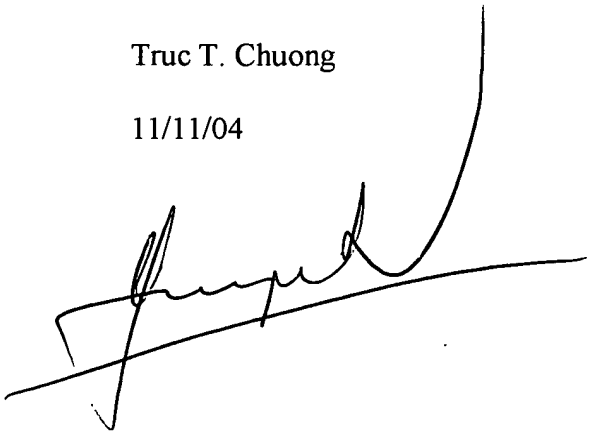
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Truc T Chuong whose telephone number is 571-272-4134. The examiner can normally be reached on M-Th and alternate Fridays 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather R. Herndon can be reached on 571-272-4136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Truc T. Chuong

11/11/04

A handwritten signature in black ink, appearing to be 'Truc T. Chuong', is written over a horizontal line. The signature is stylized with a large, sweeping loop at the end.